

Th. v. 1222, 1223, 1224

April 1914

For "The Monthly".

Professor A. E. Coleman was granted leave of absence for three months in order to visit Australia at the time of the meeting of the British Association.

It has been decided to establish a laboratory for the preparation of diphtheria antitoxin and other biological products in connection with the Department of Hygiene of the University of Toronto.

The reasons for the establishment of this laboratory in the University are:

- (a) It will provide opportunity for research along the lines of Preventive Medicine and Hygiene.
- (b) The laboratories will be available for special teaching of research men and advanced students.
- (c) The laboratory will be entirely self-supporting and still not purely commercial. The biological products prepared will be sold to Boards of Health, Hospitals, and to private practitioners at cost.
- (d) It is possible because of the University connection to obtain the services of men especially trained in Immunity and Bacteriology to direct the work of producing such biological products. It is expected that such research work will be done by these men.
- (e) In the University of Warburg, Germany, where Von Behring the discoverer of diphtheria antitoxin is Professor of Hygiene a plan similar to this is in operation. The Lister Institute in London and the Pasteur Institute, Paris, also prepare such antitoxins.

It is proposed also to prepare Tetanus antitoxin, anti-meningitis serum, anti-streptococcus serum and probably vaccine: to supply the Pasteur prophylactic treatment for rabies. The cost is the same as that of the product of the research laboratory of the Department of Health, New York.

It is particularly to be emphasised that this work in no way conflicts with the proposed Federal Department of Health; the desirability of which is absolutely evident. That this statement be fully understood reference may be made to the report of Dr. Charles A. Hodges, Medical Adviser to the Conservation Commission, where he said, "I would again direct the attention of the Commission to the necessity which exists for the consolidation of all branches of Federal Public Health work into one co-ordinated Public Health Division with central public laboratories under the supervision of medical, bacteriological and chemical experts. This organisation ^{will} ~~might~~ ^{have} made a service somewhat along the lines of the Public Health Service of the United States". (Page 8, Fourth Annual Report Commission of Conservation, Canada, 1913). It is only necessary to say that the United States Public Health Service does not prepare antitoxins for free distribution but does regulate their production and sale. This is also true of the Federal Health Departments of England, France and Germany. Therefore the necessity for a Canadian Federal Department of Health is quite as urgent as before.

1

86

Plans for the establishment of a department for the preparation of Diphtheria Antitoxin and other biological products in the Department of Hygiene, University of Toronto.

has been decided

- I. It ~~is proposed~~ to establish a laboratory for the preparation of diphtheria antitoxin and other biological products in connection with the Department of Hygiene of the University of Toronto.
2. The reasons for the establishment of this laboratory in the University are:
 - (a) It will provide opportunity for research along the lines of Preventive Medicine and Hygiene.
 - (b) The laboratories will be available for special teaching of research men and advanced students.
 - (c) The Laboratory will be entirely self-supporting and still not purely commercial. The biological products prepared will be sold to Boards of Health, hospitals, and to private practitioners at cost. In this way the burden of production is borne by the individual municipality and not by the Federal or Provincial Government.
 - (d) Because of the University connection, laboratories are available and only a very modest outlay is necessary to equip them so that this work may be carried on. It is ~~also~~ possible because of the University connection to obtain the services of men especially trained in Immunity and Bacteriology to direct the work of producing such biological products. It is expected that much research work will be done by these men.
 - (e) In the University of Marburg, Germany, where Von Behring the

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discoverer of diphtheria antitoxin is Professor of Hygiene a plan similiar to this is in operation. The Lister Institute in London and the Pasteur Institute, Paris, also ~~derive a large por~~^{prepare such} ~~tion of their revenue from the sale of antitoxins. Such reven-~~
~~ues go toward the support of Medical research as is proposed here.~~

- (f) That no possible commercial end is in view it may be stated that diphtheria antitoxin will be sold at the outset for .10 per thous and units. The ordinary cost of the same being from \$1.10 to \$1.50 per thousand units; and the special cost to hospitals and boards of health being .20. Therefore there will be an immediate re- duction of one hundred per cent in cost. Eventually diphtheria antitoxin will probably be produced for about .6 to .8 per thous- and units.
- (g) But very slight expense need be incurred before biological pro- ducts are being produced on a large scale. See financial statement.
- (h) Most important of all work has actually been started in a modest way. A stable to accomadate five horses has been built. The horses are being obtained, toxin prepared and immunization will be start- ed about November 20th. It is anticipated that diphtheria anti- toxin will be ready for distribution in from four to five months.
- (i) With about double the amount of money so far available the work can be considerably extended and the production fo other biologi- cal products can be commenced. It is proposed to prepare Tetanus ^{also} antitoxin, anti-meningitis serum, anti-streptococcus serum and probably vaccine.
- (j) The work will be entirely self-supporting but with a larger immed- iate outlay additional accomodation for more horses can be obtain- ed and work continued on a larger scale.

- (k) This department is also prepared to supply ~~at once (the preliminary work having been done)~~ the Pasteur prophylactic treatment for rabies. The cost is the same as that of the product of the Research Laboratory of the Department of Health, New York.
- (l) It is particularly ^{to} be emphasized that this work in no way conflicts with the proposed Federal department of Health; the desirability of which is absolutely evident. That this statement be fully understood reference may be made to the report of Dr. Charles A. Hodgetts, Medical Adviser to the Conservation Commission, where he said, "I would again direct the attention of the Commission to the necessity which exists for the consolidation of all branches of Federal Public Health work into one co-ordinated Public Health Division with central public laboratories under the supervision of medical, bacteriological and chemical experts. This organization might well be made a service somewhat along the lines of the Public Health Service of the United States". (page 6, Fourth Annual report Commission of Conservation, Canada, 1913.) It is only necessary to say that the United States Public Health Service does not prepare antitoxins for free distribution but does regulate their production and sale. This is also true of the Federal health departments of England, France and Germany. Therefore the necessity for a Canadian Federal department of Health is quite as urgent as before.

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Financial Statement.

Initial Expenses-

1. Lease of land for stable-----	\$300.00
2. Cost of construction of same-----	\$700.00
3. Alterations in laboratories-----	\$300.00
4. Equipment-----	\$500.00
5. Maintenance for four to six months until antitoxin is produced-----	\$700.00
Total initial outlay-----	\$2500.00

Subsequent Expenses, Costs, etc.

Annual receipts from 5 horses.

15,000,000 units of antitoxin per horse at .10 per thousand units

$75,000,000 \times \frac{.10}{1000} = \$7,500.00$ receipts.

Expenditures:

Salaries--	\$2,500)	
	\$ 600)--	\$3,300.00
	\$ 200)	
Upkeep of animals--	---	\$1,500.00
Guinea-pigs-----	---	\$ 300.00
Glassware, etc.-----	---	\$1,500.00
Incidentals-----	---	\$ 500.00
Total Expenditures--	---	\$7,100.00

Receipts---\$7,500.00

Expenditures--\$7,100.00

Balance. \$ 400.00

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Receipts from 10 horses -

15,000,000,units X 10X.10 = \$15,000.00 annual receipts.

Expenditures -

Salaries	\$2,500.00- -----	\$3,000.00
2 at \$600.00-----		\$1,200.00
1 at \$750.00-----		\$ 750.00
Upkeep of animals-----		\$2,500.00
Guinea-pigs-----		\$ 750.00
Glassware etc.-----		\$3,000.00
Extras-----		\$1,000.00
Total		<u>\$ 12,200.00</u>
Annual receipts---	\$15,000.00	
Expenditures---	\$12,200.00	
Balance-----	<u>\$ 2,800.00</u>	
Extra stable accomodat-		
ion will be necessary for		
10 horses-----cost say-	\$ 1,200.00	
Net surplus----	<u>\$ 1,600.00</u>	

With very slight increase in annual expenditure many more horses can be immunized, and other antitoxins produced which would materially increase the surplus.

Funds necessary for Immediate Use.

With \$2500.00 the University can at once continue the work with 5 horses. With \$5000.00, 10 horses can be started. No further outlay will be necessary until anti-toxin is being distributed.

To the Board of Governors of the University of Toronto,

The Committee appointed by the Board of Governors to consider whether it is advisable for the University to become responsible for the establishment in the Department of Hygiene and under the direction of Dr. J. G. Fitzgerald, Associate-Professor of Hygiene, of a plant for the preparation of Antitoxins and other biological products to be sold to the City of Toronto, the Province of Ontario, and any others who may apply begs to report as follows.

There were present the President of the University and Dr. D.E. Macdonald with whom also sat the Chairman of the Board of Governors.

Dr. Fitzgerald presented a statement, herewith attached, of the amount of money that had been already incurred in conducting this work during the winter months. He also submitted estimates as to what would be required immediately if the University were to become responsible for this work. In the way of capital there would be necessary expenditure in the immediate future of some \$6000, which it would be necessary to increase in a few years by at least the same amount for the purchase of a small field in the country and the erection of stables. The yearly maintenance including salaries of Dr. Fitzgerald and the necessary staff would be \$ Dr. Fitzgerald stated that in his judgment there would be an annual revenue of about \$12,000. \$5,000 of this to come from the City of Toronto and \$7,000 from the Province at large. In support of his opinion he stated that the City of Toronto in the past year had spent \$7,000 on the purchase of these antitoxins and was willing hereafter to purchase them from the University inasmuch as they could be provided at a lower cost. Also the Medical Health Officer, Dr. McCullough, has endorsed the scheme by

sending a letter to the Health Officers of the Province advising them to purchase their supplies from Dr. Fitzgerald. With such an annual revenue the capital charges could soon be met over and above what is required for maintenance. In addition such an equipment will make it possible for the University to have researches conducted in the Department of Hygiene that may result in advance in the science of medicine.

For these reasons the Committee recommends that the University take over from Dr. Fitzgerald the plant that has already been established, and that hereafter it be maintained under the control of the University.

It is recommended also that notification be sent to the Government that the University has taken such action and has been partly induced to do so by the statement of the Medical Health Officer, Dr. McCullough, that he had urged upon the Medical Health Officer of the Province to co-operate by purchasing their supplies from Dr. Fitzgerald.

All of which is respectfully submitted.

April 23rd, 1914

Chairman.